JOSEDH DIXON

ONE OF THE WORLD·MAKERS

BY

ELBERT·HVBBARD

THE·ROYCROFTERS
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ONE OF

The World-Makers

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A SHORT time ago Mr. Andrew Carnegie supplied us a list of twenty men who have practically made the civilized world what it is today.

The publication of this list created a good deal more than a ripple on the literary sea.

Among others, I was invited to supply a list of twenty men who had influenced the world most, and here is the list of the great men who, in my mind, are best entitled to the title of world-makers:

1. Pericles, who took the treasure of Delos—a fund raised for war purposes—and used it to build the most beautiful city the world has ever seen. The influence of Pericles—in architecture, sculpture, oratory, literature, the drama, physical culture—still endures and animates and inspires every worker in the arts.

2. Aristotle, the world's first scientist, to whom very much of our scientific terminology now traces. Aristotle organized the first herbarium, the first geological collection, the first zoological garden. He taught the world that health, sanity and

happiness are to be obtained only through an understanding of and compliance with the laws of Nature, and a love of Nature.

3. Michelangelo, a workingman who sanctified manual labor; the first of modern architects; a poet, a painter, a sculptor, an engineer, a worker in the metals. Millions upon millions of simple people today look upon his work and are uplifted by it.

4. Columbus, who gave the world a continent, even though he died in chains.

5. Benjamin Franklin, discoverer, inventor, businessman, financier, diplomat, philanthropist, philosopher.

6. Gutenberg, inventor of the art of printing from movable types.

7. Watt, the practical inventor of the steam-engine

8. Arkwright, inventor of spinning and weaving machinery

9. Stephenson, inventor of the locomotive.

10. Adam Smith, author of "The Wealth of Nations," the first book that treats economics as a science, and the first man who claimed that civilization is the result of our activities and not a product of abstract thinking.

11. Thomas Jefferson, the only Democrat the world has ever seen; who taught the principles of a Republican form of government, and founded our public-school system; a man singularly patient, creative, loving, generous, gentle, and with whom the world has not yet caught up.
12. Charles Darwin, discoverer and teacher of evolution
13. Joseph Dixon, scientist, inventor, chemist, machinist, sociologist, humanitarian.
14. Lincoln, emancipator and statesman.
15. Edison, applier of electricity and commonsense.
16. Hargreaves, inventor of the spinning-jenny.
17. Alexander Graham Bell, the inventor of the telephone
18. Perry G. Holden, who through the selection of seed-corn has shown the world how to double its productive wealth per acre.
19. George Westinghouse, inventor of more than fifteen hundred mechanical and electrical appliances, most important of which, perhaps, is the railroad air-brake.
20. Friedrich Froebel, through whose teachings corporal punishment has been abandoned, and who gave the world a new system of education.

All of our progress along the line of pedagogy has been through the application of the Froebel method introduced in the higher grades, and whether Froebel knew it or not, he was heir to the ideas of Aristotle, who lived three hundred fifty years before Christ.

HIS list of the world's great men has been widely printed and extensively commented upon

It has received the commendation and endorsement of many of the biggest and best thinkers in America today.

Quite a number of high schools and colleges have taken this list as a basis for study as to the influences that have most benefited and uplifted the world

Some of the men in this list I have written about at length. The others I intend to write on.

But just now I want to say a few things about Joseph Dixon, a man whose work has profoundly influenced civilization, yet strangely enough, a man of whom the world at large knows little. In fact, if you have the good fortune to have a little silver jingling in your pocket, not to mention

gold, the coins have been minted through appliances invented by Joseph Dixon.

You reach for a lead-pencil and you make use of another of Dixon's inventions, for let it be known that the lead-pencil is a little like the guinea-pig, for the guinea-pig is n't a pig and it is n't from Guinea. The modern lead-pencil is n't made from lead or from anything that even contains a chemical trace of lead.

There is no article in such universal use as the lead-pencil. James J. Hill had his photograph taken the other day in New York, and in his hand he holds a Dixon pencil, the brand plainly visible. And here I am, writing this article with a Dixon lead-pencil, and have half a dozen more Dixon lead-pencils in my pockets, or strewed over the table

Everybody steals lead-pencils without any qualm of conscience, just as we "lift" umbrellas when they happen to be handy.

In dining-cars, a worthy colored man tells me, four out of five of the male patrons pocket the railroad lead-pencil after making out their order.

¶ Joseph Dixon was the first manufacturer of lead-pencils in the United States; in fact, much

of the machinery used in pencil-making today is of his invention, although it was not until Eighteen Hundred Seventy-two that the Dixon Company put its first lead-pencils on the market under the Dixon name, the first gross of pencils being sold to a dealer in Morristown, New Jersey. The Dixon Crucible Company is now one of the largest manufacturers of lead-pencils in the world.

HE consumption of lead-pencils in America is about two hundred million a year; that is to say, we use two lead-pencils to a person.

The test of civilization is the consumption of lead-pencils

In certain States in the Union the consumption of lead-pencils is only about half a pencil to a person. In other States, there are three or four pencils used a year per person, and in one State there are six pencils used to a person. It would be unfair and perhaps indelicate, and arouse needless sectional antagonisms, to mention the States that used most or least in the way of lead-pencils.

The pad-and-pencil habit is a wonderful one, and any one who has it will become a distinguished individual. The idea is simply this: When the

thought flashes through your electric sky-piece, seize upon it and get it down in black and white on the pad. This is the great Dixon Idea, put forth by Joseph Dixon, but upon which there is no caveat, copyright or patent. Dixon was an average man who evolved into a genius through the habit of making the best use of his energies. Life to him was a precious privilege. He prized his time and valued his thoughts.

It has well been said that one can not enter a shop, a store, a bank or a factory without seeing things that had their origin in the fertile brain of Thomas A. Edison. In fact, you can not look out of a window in any city of Christendom but that you see things bearing the mark of Edison.

It is almost equally true of the work of Joseph Dixon, although, of course, his work was less spectacular than that of Edison; but Edison in degree built upon the work of Dixon and made use of many of Dixon's appliances and ideas, all of which Edison freely acknowledges. Edison is so rich in ideas that he has always been willing to give due credit to others. We build upon the past, and all the days that have gone before have made this day, this time, this place possible.

In the laboratory of Thomas A. Edison at Orange, New Jersey, are to be seen the retorts and crucibles invented by Joseph Dixon.

Civilization is a matter of collaboration, and when we sit down to dinner we make use of the net results of the work of ten thousand men and women.

JOSEPH DIXON was born at Marblehead, Massachusetts, in the last year of the last century. He died in Jersey City in Eighteen Hundred Sixty-nine.

He possessed from boyhood all of the restless, noble discontent that has made the Yankee Nation supreme in the world of invention. His was the restless mechanical brain. Nothing was ever good enough. It must be made better. He looked upon raw materials, and in the vividness of his imagination saw a completed product.

His first invention was a machine for cutting files. Before Dixon's day files were made by hand. He became a printer, and not having the money to buy metal type, he set to work engraving on wood and made his type of wood. Incidentally, he became a skilled wood-carver.

Later, he invented a matrix for casting type, and

the melting of materials for the making of type led straight to the manufacture of a crucible that would withstand heat, and not fuse with the metal that was being melted.

By the time Joseph Dixon was twenty-one, he was regarded in New England as an expert chemist. He studied medicine with intent to become a practising physician, but, seemingly, he lost faith in drugs, and this at a time when all the world believed in the efficacy and excellence of poisons as remedies.

Joseph Dixon said, " If you are immersed in your work and do not overeat and underbreathe, you will never get sick." An amazing proposition in its simplicity, when we think that the statement was uttered in Eighteen Hundred Twenty-two! ¶ He took up the business of an optician and made lenses, grinding the lenses with aid of graphite, a plan that is still continued.

He experimented on the work of Daguerre, and was the first man to produce a portrait by means of a camera. He showed Professor Morse how to take portraits with the aid of a reflector, and this use of the reflector was utilized later in telegraphy, and especially in the use of the electric cable ❧

He was the first man to build a locomotive with a double crank, and I believe he was the man who showed Fulton how to arrange his steam-engines so they would not get stuck on the center.

¶ He perfected the process of lithography. From printing with movable type he began to print on a flat stone surface; and from printing with the use of lithograph-stones, he began to print by the solar process, which, of course, is the basic idea in photography

At this time bank-notes were easily counterfeited. Joseph Dixon invented a scheme of printing bank-notes in colors, and had the process patented It seems, however, that other printers took up the idea, and Dixon allowed them to use the process without paying royalty, and thus the idea drifted into common use, and became, as it were, current coin of the realm.

The printing of money led to the coinage of metals, and Dixon invented a crucible made from graphite for the melting of gold and silver. Later, this crucible was adapted even to melting steel and materials that formerly had defied the metal-worker. Joseph Dixon was the first man to use collodion for photographer's use

And the wonderful system of grinding lenses, perfected in America by that great and good man, Mr. John Brashear, who has done better work in his own particular line than any other living man, traces a direct pedigree to the fertile brain of Joseph Dixon.

HERE is considerable controversy as to who it was invented the process of making Babbitt metal, but certain it is that Babbitt got the initial impulse from Joseph Dixon.

Babbitt metal is simply a metal that obviates friction. It is used in the bearings of journals, cranks, axles, etc., and this idea came to Dixon in his work of perfecting the crucible.

Lead-pencils, before this, were made of compositions of lead, first being made from straight lead bars

Joseph Dixon was one of the first to discard lead entirely and use graphite instead. This followed, very naturally, from the fact that in using graphite Dixon got his hands and face thoroughly well blacked

To utilize the black, then, was the next thing, for Dixon—true Yankee that he was—made money

out of his faults, his blunders and his failures, and everything that he did he was able to turn into power with the aid of his enthusiasm, his imagination and his wonderful inventive faculties. It is a great man who can cash in his mistakes. If Dixon did not always find the thing he was working for, he usually got something just as good.

He started the business, in Salem, Massachusetts, in Eighteen Hundred Twenty-seven, and continued it in the same plant until Eighteen Hundred Forty-seven ❧ ❧

At that time there was very little demand for lead-pencils. It was not a writing age. People were too busy cutting down the forests, getting a living, building houses and doing the necessary work of pioneer times.

Dixon made his lead-pencils and then went out peddling them among the people. It was a peddling age, and manufacturers would make up a quantity of their products in their homes and then go out and sell them.

New England was a country of peddlers, and these peddlers educated the people—and themselves. You can't hibernate and get an education. Wherever they went these Yankees distributed all the

knowledge they possessed, and a few things besides. They picked up wisdom and passed it along.

Emerson, in his essays, speaks of the " wonderful things sent us from Connecticut." Emerson had a hired man by the name of Henry Thoreau, who made lead-pencils. Henry Thoreau's father learned the business in the shop of Joseph Dixon over at Salem, where witches once held high jinks.

At Salem lived a man by the name of George Peabody, who was a friend of Dixon's. Peabody clerked in a country store and afterwards became a peddler, and among the wares that Peabody sold were stove-polish and lead-pencils, made by Joseph Dixon

Henry Thoreau did not have quite enough business ability, being inclined more toward using pencils than selling them. So his lead-pencil business languished, and the spiders and mice accepted the receivership.

Peabody went down to Georgetown, in the District of Columbia, founded a big business in the Yankee notion line, drifted off into drygoods, became a banker, went over to London and did things in the line of philanthropy so big that they astounded and astonished the world.

Peabody is the world's first philanthropist; his name is deathless, on account of his having introduced altruism into business, being the first man, practically, who regarded business as public service, and wealth as a trusteeship.

THE center of the lead-pencil business seemed to drift from New England to New York, because in New York there were wholesale dealers who took the entire product of manufacturers and distributed it for them, saving the manufacturer the trouble of going from house to house to sell his product.

Stoves are practically a very modern invention. Seventy-five years ago, most everything was cooked in fireplaces, in metal pots.

When the stoves came in and rust began to disfigure the tidy housewife's necessary possession, stove-blacking seemed a very desirable thing.

Dixon used his graphite idea and made the first stove-polish

The idea came to him, of course, through the discovery of what a wonderful polish he put on his hands in working in the graphite, making crucibles

In Eighteen Hundred Forty-seven, Dixon moved to Jersey City, which was a suburb of New York. He bought land out on the prairie for fifty dollars an acre, and started his business of making crucibles, stove-polish and lead-pencils ☙ But the principal business was the supplying of crucibles to men who were melting metals. One of the best customers for the Dixon crucible was our Uncle Samuel, and these crucibles were bought for use in minting gold and silver. Later, Uncle Sam ordered Dixon lead-pencils, a hundred gross at a time. The United States Government has always been one of the best Dixon customers.

In the year Eighteen Hundred Sixty-seven, Dixon, feeling that the business was going to grow as the years progressed, and as the demand for graphite articles increased, and realizing that his own strength was failing, formed, under a Special Act of Congress, a corporation known as the Joseph Dixon Crucible Company. At that time the making of crucibles was a practical monopoly—no one knew how to do the trick as well as Dixon.

This business continues now, constantly growing, constantly enlarging with the spirit of the times. It is the biggest institution of its kind in the world.

HE success of Joseph Dixon in a business way was based on the use of graphite. Graphite is known as plumbago or black-lead. It is commonly called a mineral. It is widely diffused, being found almost everywhere in the wide world, but only in a few places in sufficient quantities so it can be mined to advantage.

Graphite is a crystal, formed, it is believed, from the remains of the plants known as the Plumbaginaceæ, mixed in a certain degree with animal remains.

It has the qualities somewhat of mineral oil, and also partakes of the elements of anthracite-coal. It is anthracite with a college education.

The same substance of which Nature makes asbestos is distributed, in degree, through graphite.

¶ It is found in very thin layers between the strata of rocks. A graphite deposit six inches through is deemed well worth working.

A large amount of the graphite used in America comes from Ceylon. However, the Dixon Company own deposits at Ticonderoga, New York, and the Ticonderoga graphite is used extensively by them. There are also deposits of it in New Hampshire.

¶ Joseph Dixon's first introduction to graphite

was through an old farmer in New Hampshire bringing him samples of the mineral and wanting him to interest himself in working the mine, which was supposed to be on the old farmer's property. Unhappily, the vein of graphite discovered by the New Hampshire man produced only a few hundred pounds. But this was enough to fire the zeal and curiosity of Joseph Dixon, and to start him in his line of experiments.

He then arranged with sea-captains that were sailing between the Port of Boston and East India to bring back from Ceylon quantities of graphite for his use.

This was the first importation of graphite in America

N the death of Mr. Dixon in Eighteen Hundred Sixty-nine, the practical management of the business drifted to Mr. John A. Walker, who went into the works as errand-boy and janitor, and arose step by step, for power always gravitates to the man who can shoulder it.

Walker was the moving spirit in the Dixon enterprise until the day of his death, in Nineteen Hundred Seven. He served the Dixon Company

for more than forty years. He was a man of marked personality, heir, through love and devotion, to a good deal of the genius of the dead chief.

In Eighteen Hundred Eighty-nine the Dixon Company was practically reorganized ∞ Mr. E. F. C. Young was made President of the concern; Mr. John A. Walker was made Vice-President, Treasurer and General Manager; and George E. Long, Secretary.

John A. Walker ended his work in this world in Nineteen Hundred Seven, and President Young passed away in Nineteen Hundred Eight, and was succeeded by his son-in-law, Mr. George T. Smith, who had had an experience of thirty-five years with the Pennsylvania Railroad Company and who was Vice-President of the First National Bank of Jersey City, of which Mr. Young was President. Mr. Wm. H. Corbin, a well-known lawyer of Jersey City, was made Vice-President and General Counsel; Mr. George E. Long, Treasurer; Mr. Harry Dailey, Secretary; and Mr. J. H. Schermerhorn, Assistant Treasurer and Secretary ∞ ∞

In all the history of this great concern, it was never so prosperous as it is now. Free competition

has made the Dixon Crucible Company supreme in the manufacture and distribution of graphite products

In the way of graphite lubricants, twenty-seven different forms are supplied. Graphite, for the use of electrical workers and manufacturers of electrical supplies, has become a very important department of the business.

Graphite is used in electrotyping and for polishing and dyeing, and for paint and metal structure work; and the demand for crucibles still continues as never before.

Chemists are a superstitious lot, and after they get a thing that serves their purpose they are not to be diverted by the offer of something else "just as good."

In melting gold and silver, men can not afford to take chances on an imperfect implement.

Dixon crucibles mean the standard of excellence, and anything upon which the name of Dixon is placed is a guarantee of its purity, strength and its effectiveness.

HE intricate machinery used in the manufacture of crucibles, stove-polish, and other graphite products sprang almost entirely from the restless brain of Joseph Dixon. Most of these inventions are unpatented, and they are made in the Dixon machine-shops for the exclusive use of the Dixon Crucible Company. If any one else can make a machine " just as good," he is welcome to go ahead, and the strange part is that he never does it

The Dixon Company are also very largely indebted to their own mechanics for many of the improvements that have been made in their intricate machinery. These men are ever on the watch to improve and simplify the wonderful labor-saving machinery. They are satisfied, and satisfied men are always endeavoring to help their employers. They are appreciated, and encouraged.

The Dixon Company are the largest consumers of graphite in the world. They are also the largest consumers of cedar. Anywhere in the world where cedar-trees are grown lush and lusty, the Dixon folks will buy the property if it is for sale. The Dixon folks own between seventy and eighty thousand acres of cedar-forests in Florida.

They have cedar-trees enough in sight to answer their requirements for a hundred years to come. ¶ Forestry forms a big interest with the Dixons. The subject of raising cedar-trees has been considered by them from every possible standpoint, and the men they hire to look after their trees are experts in their especial line.

On account of the great use of the especially constructed machinery, the Dixons do not employ as many helpers as one might suppose. Between fifteen hundred and two thousand people do their work

One of the needs for which a machine has never been invented is the picking up of twelve lead-pencils out of a mass at one motion. In the Dixon works the visitors are surprised and pleased to see scores of bright, healthy, active girls, who reach a hand into a box without looking, and pick out twelve pencils with one grab, ninety-nine times out of a hundred.

This degree of efficiency shows how we not only think with our heads, but with our hands. Most of us are uneducated in a digital way. Joseph Dixon himself used to boast that he could do this thing, and he it was who taught the girls how to

think with their fingers. Outside of Joseph Dixon, this exquisite digital skill seems to be a feminine attribute, for no man around the Dixon works can approach the women in efficiency.

Naturally, the Dixons are very proud of their helpers, some of whom have been with them upwards of fifty years, and are still at it.

The Dixon business stands as a great solid entity, ably organized, meeting the needs of millions of people

As the commercial interests of America grow more and more, so will Dixon products be in demand. The immense strides of the Dixon Crucible Company within the past few years give only a guess as to what the work will eventually develop into.

¶ Surely Joseph Dixon, with all his vividness of imagination, never anticipated the extent to which this business that he founded has grown.

So far does a little candle throw its beams!

MODERN BUSINESS IS FOUNDED ON HUMAN SERVICE